FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

FIFTH ANNUAL REPORT

for the year ending March 31, 1986

SECRETARIAT ON FORESTRY RESEARCH AND DEVELOPMENT

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LETTER OF TRANSMITTAL

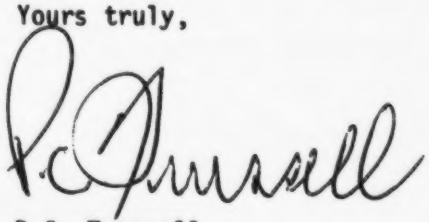
The Honorable J.H. Heinrich
Minister of Forests
Parliament Buildings
Victoria, B.C. V8V 1X4

Dear Sir:

It is with pleasure that I submit this fifth Annual Report of the Forest Research Council of British Columbia, for the year ending 31 March 1986.

I remain,

Yours truly,



P.C. Trussell
Chairman
Forest Research Council

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FOREST RESEARCH COUNCIL OF B.C.

Membership	Date of Appointment	Term
Chairman:		
P.C. Trussell, Ph.D.	Feb. 1981	indefinite
Term:		
Woods industry, coast		
G.L. Ainscough Vice-President and Chief Forester MacMillan Bloedel Ltd.	Sept. 1984	3 yrs
Woods industry, interior north		
R. Stowell Vice-President, Woods Operations The Pas Lumber Co. Ltd.	Sept. 1984	3 yrs
Woods industry, interior south		
I.S. Tolnai Chief Forester Weyerhaeuser Canada Ltd.	Sept. 1984	3 yrs
Ranching		
E.T. Osborn Manager, Coldstream Ranch Ltd.	June 1983	3 yrs
Recreation		
N. Purssell Outdoor Recreation Council	Sept. 1985	3 yrs
Wildlife		
I. McTaggart-Cowan, Ph.D. Professor Emeritus University of British Columbia	Sept. 1984	3 yrs

Membership	Date of Appointment	Term
Continuing:		
British Columbia Ministry of Forests		
- Chief Forester	Sept. 1984	indefinite
- Director, Research Branch	Sept. 1984	indefinite
Canadian Forestry Service		
- Director General, Pacific & Yukon Region Pacific Forest Centre	Sept. 1984	indefinite
Forest Engineering Research Institute of Canada (FERIC)		
- Manager, Western Division	Sept. 1984	indefinite
Fisheries & Oceans Canada		
- Director, Fisheries Research Branch Nanaimo	Sept. 1984	indefinite
Forintek Canada Corporation		
- Director of National Programmes Western Laboratory	Sept. 1984	indefinite
Universities		
- Dean of Forestry, University of British Columbia	Sept. 1984	indefinite
Observer		
Science Council of B.C. J.T. Sample, Ph.D. Executive Director		

SECRETARIAT ON FORESTRY RESEARCH AND DEVELOPMENT

R.M. Strang, Ph.D. Executive Director and Secretary to the Council

M.L. Wallis Secretary/Office Manager

The resignation of Dr. V.C. Brink was accepted in August 1985 with regret, ar with appreciation for his thoughtful and constructive contribution to the wor of the Council. His successor is Mr. Norman Purssell, a long-standing member of the Outdoor Recreation Council.

INTRODUCTION

The Forest Research Council of B.C. and its Secretariat on Forestry Research and Development were formed under the authority of the Ministry of Forests Act (1 January, 1979) to "... advise him (the Minister) with respect to any matter included in his duties, powers and functions ...". This mandate was amplified in the Ministry's 1980 "Blueprint for Action" as being "... to co-ordinate all forest research in the Province and sponsor grants for research and forestry education".

Although the forest economy is beginning to recover from the lows of the early eighties, it has not yet reached a point where a significant increase in funding for forestry research is possible.

As improvement in the forest continues, the Council looks forward to helping ensure that research is directed to those areas of greatest concern to forest managers and forestry practitioners. It will also be a major interest of Council to build on and to enhance existing technology transfer efforts so that the most up-to-date and appropriate techniques and knowledge are fully utilized.

ACTIVITIES

Regular Meetings of Council

The Council held four regular meetings, including the Annual General Meeting, in Richmond and one at the Canadian Forestry Service's Pacific Forest Centre in Victoria.

Of the three sub-Committees, the Policy and Priorities sub-Committee has been the most active. It continues to address the question of research needs and priorities. An innovation to be tested in 1986 will be a series of presentations to Council by representatives from the principal research agencies outlining current activity areas and development plans.

The Communications and Technology Transfer sub-Committee has prepared draft guidelines for a publications policy and is pursuing the possibilities of a quarterly newsletter listing relevant forestry research and development literature.

The Finance and Audit sub-Committee has had less to do now that personnel administration matters have been resolved following transfer of the Secretariat staff from Ministry of Forests to Council employment. It maintains a watching brief over Council's finances.

Expenditure on forestry-related research, 1985-86

The accompanying table shows how the several agencies which conduct forestry-related research in B.C. apportion their expenditures to different components, and the total outlays. Component totals are not given because some agencies have a fiscal year 1 January to 31 December, while others operate 1 April to 31 March and because of the risks of double-counting, which would over-estimate the total research expenditure; for example university spending includes some Science Council grants and Ministry of Forests contracts which are also included in the expenditures of these two agencies. Also different agencies allocate overhead costs in different ways.

Correcting for such double-counting gives an estimated total research expenditure of some $48 million.

FOREST RESEARCH IN B.C. 1985-1986 Actual Dollars Spent (in thousands rounded), by agency

Agency	Total $ (000)	Tree Improvements & Genetics	Nurseries & Seeds	Ecology & Soils	Tree Physiology	Plantation Establishment	Stand Tending			Protection			Growth & Yield	Harvesting	Solid Wood	Pulp Products	Economics & Policy	Fisheries & Hydrology	Range	Recreation	Wildlife	Environmental Studies
							Spacing	Thinning	Fertilizing	Fire	Insects	Diseases										
Pacific Forest Centre Can. Forestry Service	7,200	534		490	408	820	---	208	---	387	2,954		200				676					510
B.C. Forest Service																						
- Research Branch	6,368	3,158[1]	809	344	299	337							293					216	178		732	
- Regional Research	2,413	5		1,168		582[2]					24		29	140[3]				415			51	
- Silviculture (Sx)	105					105[2]																
- Section 88	327	212	115																			
FERIC	1,480							80	---					1,400								
FORINTEK	6,000														6,000							
PAPRICAN	800															800						
UNIVERSITIES																						
- Simon Fraser	603		59	31		47					398						51			17		
- U.B.C.-Forestry	2,283	15	85	231			---	264	---	95	80	46	154	22	105	21	835	98		82	149	
- U.B.C.-Other	894	116		105											450	160		2	59		1	
- U. Victoria	97	97																				
Min. Environment																						
- Wildlife Branch	560																				560	
Dept. Fisheries & Oceans	600																	600				
Agriculture Canada	94																		94			
Science Council of B.C.	1,482	576	167				---	50	---		76		21	147	259	111					76	
Industry	18,513[4]	310	73	164		132	---	83	---		13	53	403	579	8,384[5]	8,168	75	4		10	62	
	49,819																					

FOREST RESEARCH IN B.C. 1985-1986 Proportions allotted to the several topics, by agency

Agency	Total $ (000)	Tree Improvements & Genetics	Nurseries & Seeds	Ecology & Soils	Tree Physiology	Plantation Establishment	Stand Tending: Spacing	Stand Tending: Thinning	Stand Tending: Fertilizing	Protection: Fire	Protection: Insects	Protection: Diseases	Growth & Yield	Harvesting	Solid Wood	Pulp Products	Economics & Policy	Fisheries & Hydrology	Range	Recreation	Wildlife	Environmental Studies
Pacific Forest Centre Can. Forestry Service	7,200	7.4		6.8	5.7	11.4	---- 2.9 ----			5.4	41.0		2.8				9.4					7.1
B.C. Forest Service																						
- Research Branch	6,368	49.6[1]	12.7	5.4	4.7	5.3							4.6					3.4	2.8		11.5	
- Regional Research	2,413	0.2		48.4		24.1[2]					1.0		1.2	5.8[3]				17.2			2.1	
- Silviculture (Sx)	105					100.0[2]																
- Section 88	327	65.0	35.0																			
FERIC	1,480						---- 5.4----							94.6								
FORINTEK	6,000														100.0							
PAPRICAN	800															100.0						
UNIVERSITIES																						
- Simon Fraser	603		9.8	5.1		7.8					66.0						8.4			2.8		
- U.B.C.-Forestry	2,283	0.7	3.7	10.1			---- 11.6----			4.2	3.5	2.2	6.7	1.0	4.6	0.9	36.6	4.3		3.6	6.5	
- U.B.C.-Other	894	13.0		11.7											50.4	17.6		0.3	6.6		0.2	
- U. Victoria	97	100.0																				
Min. Environment																						
- Wildlife Branch	560																				100.0	
Dept. Fisheries & Oceans	600																	100.0				
Agriculture Canada	94																		100.0			
Science Council of B.C.	1,482	38.9	11.3				------ 3.4 ---				5.1		1.4	9.9	17.5	7.5					5.1	
Industry	18,513[4]	1.7	0.4	0.9		0.7	------ 0.4 ---				<0.1	0.3	2.2	3.1	45.3	44.1[5]	0.4	<0.1		<0.1	0.3	
	49,819																					

Notes: Forest & Range Resource Analysis Report, 1984 data. Plantation survival Fd, He - 65%; Si, Pl - 75%

1984-85 Annual Report - losses of timber - to fire 49,500 ha - 10 year annual average
to insects - 15,000,000 m^3
to diseases - 17,000,000 m^3

[1]includes operation and maintenance of three field stations - Cowichan, Kalamalka and Red Rock

[2]these allocations include small amounts spent on Stand Tending

[3]this work deals with soil and other environmental effects of harvesting, not with harvesting technologies

[4]includes a major sum for bringing a new product to market

[5]includes industrial health investigations

Biotechnology Forum - Show, Tell and Plan

Proceedings of this forum, which was held in February 1985, will be published and distributed in May.

Presentations by fourteen researchers working in forestry-related biotechnology are summarised, and highlights from the discussion which followed the several papers are paraphrased (Appendix 1).

Intensive Silviculture/Forest Recreation Forum

A small (22) invited group met at Council's invitation on 5th February to ascertain what research or investigation is needed at the interface between intensive silviculture and recreational uses of the forest.

The Proceedings of this fruitful workshop are now being prepared for submission and distribution.

Workshops in Preparation

A workshop to investigate the impacts of forest vegetation management practices on non-target plants, animals and micro-organisms.

This workshop will be held in October 1986.

The proposed workshop addressing the question "What do we want the forests of B.C. to be by the mid-21st century?" has been postponed to avoid conflict with the National Forestry Congress in April. It is planned that the workshop will be re-scheduled to build on the Congress with particular reference to British Columbia.

The Executive Director, in response to a request by the Ministry's A.D.M. (Finance), will convene a workshop on "Economics in Decision Making in B.C.'s Forests" probably in November. Preparatory work has begun.

Other Forestry Research Developments

The completion and signing of the Canada-British Columbia Forest Resources Development, in May of 1985 provided a stimulus to silvicultural activities. In particular, the $27 million for "extension, demonstration and R & D" in backlog reforestation and intensive forest management is a most welcome addition.

A $6 million, 3000 sq. m pulp and paper centre has been opened at the University of British Columbia to foster research and education in pulp and paper technology. It has an extensive library on this topic.

The Pulp and Paper Research Institute of Canada will soon open its new $15 million Vancouver Laboratory in Discovery Park also at the University of British Columbia.

SECRETARIAT

The Secretariat provides logistical and administrative support for Council and its sub-Committees. Liaison is maintained with the Research Branch of the Ministry of Forests, the Canadian Forestry Service's Pacific Forest Centre, Forest Engineering Research Institute of Canada, Forintek Canada Corp., the Science Council of British Columbia, the universities and industry by regular visits and attendance at planned meetings and workshops.

The Executive Director attended regular meetings of Coastal and Interior Tree Improvement Councils; the Vancouver Regional Research Advisory Committee meetings; and Silviculture Workshops both coastal and interior; and made several field visits to a wide range of forestry operations and research activities. He is chairman of a Task Force on Root Disease Research commissioned by the Pest Management Review Committee to report by 1 May, 1986, on the status and needs for root disease research in B.C. He is also convener of a small group exploring the status of the pinewood nematode, Bursaphelenchus xylophilus.

FINANCIAL STATEMENT

DICKSON, MACKENZIE, STOJAK, VANDER MOLEN
CHARTERED ACCOUNTANTS

W. Lyle Dickson
John C. Mackenzie
Peter P. Stojak
S.P.C. Vander Molen

316 - 8055 Anderson Road
Richmond, B.C.
V6Y 1S2
(604) 273-1277

AUDITORS' REPORT

To the Members,
The Forest Research Council
of British Columbia

We have examined the balance sheet of The Forest Research Council of British Columbia as at March 31, 1986 and the statements of operations and surplus for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Council as at March 31, 1986 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Dickson, Mackenzie, Stojak, Vander Molen

Richmond, B. C.
May 13, 1986

CHARTERED ACCOUNTANTS

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

BALANCE SHEET

AS AT MARCH 31, 1986

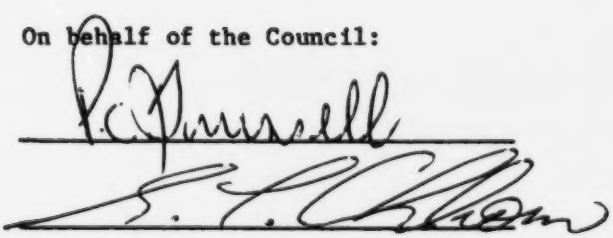
ASSETS

	1986	1985
CASH AND TERM DEPOSITS	$ 191,639	$ 50,494
ACCOUNTS RECEIVABLE	3,328	50,533
PREPAID EXPENSES	-	930
	$ 194,967	$ 101,957

LIABILITIES AND SURPLUS

ACCOUNTS PAYABLE AND ACCRUED LIABILITIES	$ 19,702	$ 23,922
SURPLUS		
General operations	15,265	13,035
Research and special projects	160,000	65,000
	175,265	78,035
	$ 194,967	$ 101,957

On behalf of the Council:



THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

STATEMENT OF SURPLUS

FOR THE YEAR ENDED MARCH 31, 1986

	1986			1985
	General Operations	Research and Special Projects	Total	Total
SURPLUS				
Balance at beginning of year	$ 13,035	$ 65,000	$ 78,035	$ 12,158
Excess of revenue over expenditure for the year	97,230	-	97,230	65,877
	110,265	65,000	175,265	78,035
Designated appropriation	(95,000)	95,000	-	-
Balance at end of year	$ 15,265	$ 160,000	$ 175,265	$ 78,035

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

STATEMENT OF OPERATIONS

FOR THE YEAR ENDED MARCH 31, 1986

	1986	1985
REVENUE		
Operating grants	$ 200,000	$ 200,000
Interest earned and sundry	10,025	3,062
	210,025	203,062
EXPENDITURE		
Council		
Professional services	6,505	4,740
Travel	3,560	2,981
Research contributions	757	10,188
Administration		
Accounting and audit	1,700	1,218
Consulting fees	945	1,170
Memberships and subscriptions	766	682
Office and sundry	3,596	6,075
Rent	11,739	11,739
Salaries and employee benefits	71,573	86,117
Travel and meeting costs	11,654	12,275
	112,795	137,185
EXCESS OF REVENUE OVER EXPENDITURE FOR THE YEAR	$ 97,230	$ 65,877

THE FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

NOTE TO FINANCIAL STATEMENTS

FOR THE YEAR ENDED MARCH 31, 1986

NOTE The Forest Research Council of British Columbia was incorporated under the Society Act of British Columbia on August 30, 1983. The purpose of the society is to stimulate and coordinate all aspects of research required to improve the efficiency of management and productivity of the forest and range resources of the Province of British Columbia.

Appendix No. 1

APPENDIX

Excerpt from Discussion

Biotechnology Forum - Show, Tell and Plan
May 27th, 1985

Six points emerged from the wide-ranging general discussion which followed:

- there is urgent need for much improved understanding of growth processes in trees (how do trees grow?), tree nutrition and soil nutrients; and of mode of inheritance and genetic variation;

- silvicultural and agricultural biotechnology would benefit from a closer liaison and exchange amongst scientists than now exists, this could help elevate biological herbicides and pesticides to operational status;

- to encourage this liaison, funds should be made available to enable researchers to visit one another and to attend meetings or symposia;

- with the impending concentration of wood processing biotechnology to Ottawa and the distance from B.C. to the developing centre of forestry biotechnology in the National Forestry Institute at Petawawa, there is need for a western biotechnology research centre to provide a locus for cooperative studies (i.e. the N.R.C. Plant Biotechnology Institute in Saskatoon might fulfill this role and provide the link to agricultural biotechnology research); as well as a western forest sciences centre with which biotechnology should be closely integrated;

- we need to foster cooperation amongst universities, as between University of Waterloo and McGill University, and between university and industry, as with Oregon State University's Co-ordinated Research on Alternative Forestry Treatments and Systems (CRAFT) program;

- there is need for a small disinterested and impartial body to maintain oversight of forestry-related biotechnology research so as to foster collaborative projects and to avoid unnecessary duplication of effort - the Forest Research Council might fulfill this function. Alternatively this might be a function of the planned N.S.E.R.C. Chair of Biotechnology in U.B.C.'s Faculty of Forestry;

- this basic information is needed before biotechnology can be applied in forestry.